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Paitan, Yossi

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Pro Phe Asp Leu Ala Cys Gly Pro Leu Ala Arg Leu His Leu Tyr Ser

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                    Arg Ser Glu His Glu His Val Leu Leu Leu Cys Phe His His Leu Val
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                    Leu Asp Gly Ala Ser Val Ala Pro Leu Leu Asp Ala Leu Arg Glu Arg
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                    Tyr Ala Gly Thr Glu Ala Lys Ala Gly Leu Leu Glu Val Pro Ile Val
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                    Ala Pro Tyr Arg Ala Ala Val Glu Trp Glu Gln Leu Ala Ile Gly Gly
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     15             Asp Glu Gly Arg Arg His Leu Asp Tyr Trp Arg His Val Leu Ala Thr
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                    Pro Val Pro Pro Pro Leu Asn Leu Pro Thr Asp Arg Pro Arg Ser Ala
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                    Thr Gly Leu Asp Ser Glu Gly Ala Thr His Ser Gln Arg Val Pro Thr
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                    Glu Gln Ala Leu Arg Leu Arg Glu Phe Ala Arg Ala Gln Gln Val Ser
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                    Leu Pro Thr Val Leu Leu Gly Leu Tyr Tyr Ala Leu Leu His Arg His
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     30             Thr Arg Gln Asp Asp Val Val Val Gly Ile Pro Thr Met Gly Arg Pro
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                    Arg Ala Glu Leu Ala Thr Ala Ile Gly Tyr Phe Val Asn Val Met Ala
                              245                 250                 255

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                    Val Arg Ala Arg Gly Leu Gly Gln His Ser Phe Gly Ser Leu Leu Arg
                              260                 265                 270

His Leu His Asp Ser Val Ile Asp Gly Leu Glu His Ala His Tyr Pro

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5      Phe Pro Arg Val Val Lys Asp Leu Arg Leu Ser Asn Gly Pro Glu Glu

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Ala Pro Gly Phe Gln Thr Met Phe Thr Phe Gln Ser Leu Gln Leu Thr

305 310 315 320

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Ser Ala Pro Pro Arg Pro Glu Pro Arg Ser Gly Gly Leu Pro Glu Leu

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Glu Pro Leu Asp Cys Val His Gln Glu Gly Ala Tyr Pro Leu Glu Leu

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Glu Val Val Glu Gly Ala Lys Gly Leu Thr Leu His Phe Lys Tyr Asp

355 360 365


20      Ala Arg Leu Tyr Glu Ala Asp Thr Val Glu Arg Met Ala Arg Gln Leu

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Leu Arg Ala Ala Asp Gln Val Ala Asp Gly Val Glu Ser Pro Leu Ser

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Ala Leu Ser Trp Leu Asp Asp Glu Glu Arg Arg Thr Leu Leu Arg Asp

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Leu Phe Gln Arg Gln Ala Arg Glu Thr Pro Asp Ala Met Ala Val Ser

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35      Tyr Glu Gly His Ser Leu Ser Tyr Gln Ala Leu Asp Thr Arg Ser Arg

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Glu Ile Ala Ala His Leu Lys Ser Phe Gly Val Lys Pro Gly Ala Leu
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5     Val Gly Ile Tyr Leu Asp Arg Ser Ala Glu Leu Val Ala Ala Met Leu
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Gly Val Leu Ser Ala Gly Ala Ala Tyr Val Pro Leu Asp Pro Val His
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           515          520         525

Val Leu Ala Arg Gln Ala Ser Arg Asp Lys Val Ala Ala Ile Ala Gly
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15    Ala Ser Cys Lys Val Cys Val Leu Glu Asp Val Lys Ala Gly Ala Thr
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Ser Ala Pro Ala Gly Thr Ser Pro Asn Gly Leu Ala Tyr Val Ile Tyr
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Arg Thr Asp Ser Leu Leu Ala Val Thr Thr Tyr Cys Phe Asp Ile Ala
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Ala Ser Ala Glu Thr Val Arg Asp Ala Gln Ala Leu Lys Arg Ala Leu
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Leu Leu Phe Gln Ser Gly Trp Glu Asn Ala Glu Arg Val Arg Ile Leu
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Cys Gly Gly Glu Ala Leu Pro Glu Ser Leu Lys Ala His Phe Val Arg
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Thr Ala Ser Asp Val Trp Asn Met Phe Gly Pro Thr Glu Thr Thr Ile
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Trp Ser Thr Met Ala Lys Val Ser Ala Ser Arg Pro Val Thr Ile Gly
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15  Lys Pro Ile Asp Asn Thr Gln Val Tyr Val Leu Asp Asp Arg Met Gln
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Pro Val Pro Ile Gly Val Pro Gly Glu Leu Trp Ile Ala Gly Ala Gly
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Val Ser Asn Pro Phe Thr Pro Gly Thr Thr Leu Tyr Arg Thr Gly Asp
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Leu Ala Arg Trp Arg Ala Asp Gly Glu Val Glu Tyr Leu Gly Arg Leu
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30  Asp His Gln Val Lys Val Arg Gly Phe Arg Ile Glu Met Gly Glu Ile
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Glu Ala Gln Leu Ala Gly His Pro Ser Val Lys Asn Cys Ala Val Val
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Ala Lys Glu Leu Asn Gly Thr Ser Gln Leu Val Ala Tyr Cys Gln Pro
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Ala Gly Thr Ser Phe Asp Glu Glu Ala Ile Arg Ala His Leu Arg Lys
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Ile Pro Leu Ser Gly Asn Gly Lys Val Asp Arg Gly Gln Leu Met Ala
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Arg Pro Val Val Thr Arg Arg Lys Thr Ser Ala Val His Ala Arg Ser
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Pro Val Glu Ala Thr Leu Val Glu Leu Trp Lys Asn Val Leu Gln Val
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Asn Glu Val Gly Val Glu Asp Arg Phe Phe Glu Val Gly Gly Asp Ser
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Arg Leu Ala Val Thr Asp Leu Phe Lys Tyr Val Asn Ile Arg Asp Met
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Glu Pro Ala Arg Glu Asp Thr Ala Ser Glu Arg Asp Tyr Glu Gly Ser
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Leu Ala Val Ile Gly Ile Ser Cys Gln Leu Pro Gly Ala Ala Asp Pro
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Tyr Arg His Glu Glu Leu Arg Glu Leu Gly Val Pro Glu Glu Val Leu
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Cys Phe Asp Pro His Phe Phe Gly Leu Thr Ala Arg Asp Ala Ser Phe
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10   Met Asp Pro Gln Phe Arg Leu Leu Leu Met His Ala Trp Lys Ala Val
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Glu Asp Ala Ala Thr Thr Pro Glu Arg Leu Gly Pro Cys Gly Val Phe
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Met Thr Ala Ser Asn Ser Phe Tyr His Gln Gly Ser Pro Gln Phe Pro
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Ala Asp Gly Gln Pro Val Leu Arg Thr Ala Glu Glu Tyr Val Leu Trp
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Val Leu Ala Gln Ala Gly Ser Ile Pro Thr Met Val Ser Tyr Lys Leu
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25   Gly Leu Lys Gly Pro Ser Leu Phe Val His Thr Asn Cys Ser Ser Ser
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Leu Ser Ala Leu Tyr Val Ala Gln Gln Ala Ile Ala Ala Gly Asp Cys
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Gln Thr Ala Leu Val Gly Ala Ala Thr Val Phe Pro Ser Ala Asn Leu
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Gly Tyr Leu His Gln Arg Gly Leu Asn Phe Ser Ser Ala Gly Arg Val
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Lys Ala Phe Asp Ala Ala Ala Asp Gly Met Ile Ala Gly Glu Gly Val

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        Asp Lys Val Gly Leu Tyr Ala Pro Ser Ala Thr Gly Gln Ala Glu Val
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        Ile Arg Arg Leu Phe Asp Arg Thr Gly Ile Asp Pro Ala Ser Ile Gly
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15      Tyr Val Glu Ala His Gly Thr Gly Thr Leu Leu Gly Asp Pro Val Glu
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        Tyr Cys Arg Leu Gly Ser Val Lys Ser Asn Leu Gly His Leu Asp Thr
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        Gly Glu Val Pro Pro Thr Leu His Val Thr Gln Val Asn Pro Lys Leu
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        Gly Gly Thr Asn Thr His Ala Ile Leu Glu His Tyr Pro Arg Asp Ser
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      Arg Gly Ile Ala Thr Val Gly Gly Ala His Val Gly Thr Val Val Asp
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      Gly Leu Ser Pro Ala His Ser Val Ala Asn Ser Ser Lys Thr His Pro
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Val Leu Val Lys Ser Ala Arg Ala Gly Asp Val Thr Asp Ser Arg Tyr
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25   His Ala Gly Gln Leu Ser Arg Cys Glu Trp Arg Glu Ala Arg Val Ala
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Lys Gly Asp Ala Ser Arg Phe Trp Arg Glu Asp Gly Val Tyr Val Ile
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Ser Gly Gly Thr Gly Ala Leu Ala Arg Leu Phe Val Ala Glu Ile Gly
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Val Asp Val Thr Gln Pro Asn Asp Val Asn Ala Phe Val Ala Thr Val
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Gln Gly Arg Thr Val Ser Ile Arg Trp Pro Leu Trp Glu Asn Gly Gly

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Met Gln Leu Asp Ser Arg Ser Arg Glu Val Leu Met Gln Arg Thr Gly
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Arg Phe Arg Glu Leu Ser Val Ser Val Ser Pro Ala Pro Pro Pro His
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5   Lys Leu Lys Ala Leu Phe Ser Glu Val Thr Arg Tyr Glu Glu Arg Arg
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    Asp Ala Thr His Arg Ala Pro Arg Ala Asp Glu Pro Ile Ala Val Ile
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35  Ala Arg Gly Met Ser Tyr Ser Lys Trp Gly Gly Phe Leu Gly Gly Phe
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Tyr Gly Ala Glu Leu Glu Gly Arg Asp Ala Ser Val Arg Pro Tyr Thr
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<210> 3

<211> 785

<212> DNA

<213> Myxococcus xanthus


<400> 3

Met Lys Val Val Asn Lys Leu Leu Glu Lys Leu Pro Asp Val Val Ala

1               5                    10                   15


Gly Lys Val Pro Asp Val Lys Leu Gln Asp Gln Asp Ile Lys Val Pro

           20                   25                   30


Leu Ala Gln Gly Thr Phe Thr Glu Glu Lys Ile Leu Pro Pro Lys Leu

           35                   40                   45


Ala Met His Gly Phe Thr Leu Ser Phe Glu Ala Thr Gly Glu Ala Ser

        50                   55                   60


Ile Arg Asn Phe Asn Ser Leu Gly Asp Val Asp Glu Asn Gly Ile Ile

65                   70                   75                   80


Gly Glu Pro Ser Pro Glu Ser Ala Glu Pro Gly Pro Arg Pro Gln Leu

              85                   90                   95


Leu Leu Gly Ser Asp Ile Gly Trp Met Arg Tyr Gln Val Ser Ala Arg

           100                  105                  110

Val Lys Ala Ala Val Ser Ala Ser Leu Ser Phe Leu Ala Ser Glu Asn
   115    120    125

5 Gln Thr Glu Leu Ser Val Thr Leu Ser Asp Tyr Arg Ala His Pro Leu
   130    135    140

Gly Gln Asn Met Arg Glu Ala Val Arg Ser Asp Leu Ser Glu Leu Arg
145    150    155    160

10

Leu Met Gln Ala Thr Asp Leu Ala Lys Leu Thr Thr Gly Asp Ala Val
   165    170    175

Ala Trp His Val Arg Gly Ala Leu His Thr Arg Leu Glu Leu Asn Trp
15   180    185    190

Ala Asp Ile Phe Pro Thr Asn Leu Asn Arg Leu Gly Phe Leu Arg Gly
   195    200    205

20 Asn Glu Leu Leu Ala Leu Lys Thr Ser Ala Lys Ala Gly Leu Ser Ala
   210    215    220

Arg Val Ser Leu Thr Asp Asp Tyr Gln Leu Ser Phe Ser Arg Pro Arg
225    230    235    240

25

Ala Gly Arg Ile Gln Val Ala Val Arg Lys Val Lys Ser His Glu Gln
   245    250    255

Ala Leu Ser Ala Gly Leu Gly Ile Thr Val Glu Leu Leu Asp Pro Ala
30   260    265    270

Thr Val Lys Ala Gln Leu Gly Gln Leu Leu Glu Ala Leu Leu Gly Pro
   275    280    285

35 Val Leu Arg Asp Leu Val Lys Lys Gly Thr Thr Ala Val Glu Ile Met
   290    295    300

Asp Gly Leu Val Asp Lys Ala Ser Lys Ala Lys Leu Asp Asp Asn Gln
305                    310                  315                  320

Lys Lys Val Leu Gly Leu Val Leu Glu Arg Leu Gly Ile Asp Pro Gln
                       325                  330                  335

Leu Ala Asp Pro Ala Asn Leu Pro Gln Ala Trp Ala Asp Phe Lys Ala
                       340                  345                  350

Arg Val Ala Glu Ser Leu Glu Asn Ala Val Arg Thr Gln Val Ala Glu
                       355                  360                  365

Gly Phe Glu Tyr Glu Tyr Leu Arg Leu Ser Glu Thr Ser Thr Leu Leu
                       370                  375                  380

Glu Val Val Val Glu Asp Val Thr Ala Met Arg Phe His Glu Ser Leu
385                    390                  395                  400

Leu Lys Gly Asn Leu Val Glu Leu Leu Lys Trp Met Lys Ser Leu Pro
                       405                  410                  415

Ala Gln Gln Ser Glu Phe Glu Leu Arg Asn Tyr Leu His Ala Thr Thr
                       420                  425                  430

Leu Thr Arg Gln Gln Ala Ile Gly Phe Ser Leu Gly Leu Gly Ser Phe
                       435                  440                  445

Glu Leu Leu Lys Ala Lys Asn Val Ser Lys Gln Ser Trp Val Thr Gln
                       450                  455                  460

Glu Asn Phe Gln Gly Ala Arg Arg Met Ala Phe Leu Gly Arg Arg Gly
465                    470                  475                  480

Tyr Glu Asp Lys Leu Leu Gly Thr Arg Gly Gln Trp Val Val Asp Leu
                       485                  490                  495

Lys Ala Asp Met Thr Arg Phe Ser Pro Thr Pro Val Ala Ser Asp Phe

                    500              505              510

Gly Tyr Gly Leu His Leu Met Leu Trp Gly Arg Gln Lys Lys Leu Ser
      515              520              525

5

Arg Lys Asp Leu Gln Gln Ala Val Asp Asp Ala Val Val Trp Gly Val
      530              535              540

Leu Asp Ala Lys Asp Ala Ala Thr Val Ile Ser Thr Met Gln Glu Asp
10    545              550              555              560

Met Gly Lys His Pro Ile Glu Thr Arg Leu Glu Leu Lys Met Ala Asp
            565              570              575

15    Asp Ser Phe Arg Ala Leu Val Pro Arg Ile Gln Thr Leu Glu Leu Ser
            580              585              590

Arg Phe Ser Arg Ala Leu Ala Arg Ala Leu Pro Trp Ser Glu Gln Leu
      595              600              605

20

Pro Arg Ala Ser Ala Glu Phe Arg Arg Ala Val Tyr Ala Pro Ile Trp
      610              615              620

Glu Ala Tyr Leu Arg Glu Val Gln Glu Gln Gly Ser Leu Met Leu Asn
25    625              630              635              640

Asp Leu Ser Pro Ser Arg Ala Ala Gln Ile Ala Lys Trp Tyr Phe Gln
            645              650              655

30    Lys Asp Pro Thr Val Arg Asp Leu Gly Lys Asp Leu Gln Leu Ile Glu
            660              665              670

Ser Glu Trp Arg Pro Gly Gly Gly Asn Phe Ser Phe Ala Glu Val Ile
            675              680              685

35

Ser Lys Asn Pro Asn Thr Leu Met Arg Cys Arg Asn Phe Val Ser Gly
      690              695              700

Met Val Arg Leu Arg Arg Ala Ile Asp Glu Arg Lys Ala Pro Asp Glu

705     710    715    720

Leu Arg Thr Val Phe Gly Glu Leu Glu Gly Met Trp Thr Thr Gly Phe

    725    730    735

His Leu Arg Ala Ala Gly Ser Leu Leu Ser Asp Leu Ala Gln Ser Thr

   740    745    750

Pro Leu Gly Leu Ala Gly Val Glu Arg Thr Leu Thr Val Arg Val Ala

   755    760    765

Asp Ser Glu Glu Gln Leu Val Phe Ser Thr Ala Arg Ser Thr Gly Ala

   770    775    780

Ala

785

<210> 4
<211> 529
<212> DNA
<213> Myxococcus xanthus

<400> 4

Met Pro Ser Gly Cys Tyr Gly Ala Ala Ser Ala Phe Val Leu Pro Pro

 1    5    10    15

Leu Pro Ala Met Pro Gln Ala Pro Ser Asp Val Ser Gln Val Leu Leu

   20    25    30

Pro Phe Gly Gly Leu Val Gly Arg Glu Val Asp Leu Asp Ala Phe Leu

   35    40    45

Gln Thr Leu Met Asp Arg Ile Ala Ile Thr Leu Gln Ala Asp Arg Gly

   50    55    60

Thr Leu Trp Leu Leu Asp Pro Ala Arg Arg Glu Leu Phe Ser Arg Ala

65              70            75            80

5    Ala His Leu Pro Glu Val Ser Gln Ile Arg Val Lys Leu Gly Gln Gly

85          90          95

Val Ala Gly Thr Val Ala Lys Ala Gly His Ala Ile Asn Val Pro Asp

100       105       110

10

Pro Arg Gly Glu Gln Arg Phe Phe Ala Asp Ile Asp Arg Met Thr Gly

115       120       125

Tyr Arg Thr Thr Ser Leu Leu Ala Val Pro Leu Arg Asp Gly Asp Gly

15    130       135       140

Ala Leu Tyr Gly Val Leu Gln Val Leu Asn Arg Arg Gly Glu Asp Arg

145       150       155       160

20    Phe Thr Asp Glu Asp Thr Gln Arg Leu Thr Ala Ile Ala Ser Gln Val

165       170       175

Ser Thr Ala Leu Gln Ser Thr Ser Leu Tyr Gln Glu Leu Gln Arg Ala

180       185       190

25

Lys Glu Gln Pro Gln Val Pro Val Gly Tyr Phe Phe Asn Arg Ile Ile

195       200       205

Gly Glu Ser Pro Gln Leu Gln Ala Ile Tyr Arg Leu Val Arg Lys Ala

30    210       215       220

Ala Pro Thr Asp Ala Thr Val Leu Leu Arg Gly Glu Ser Gly Ser Gly

225       230       235       240

35    Lys Glu Leu Phe Ala Arg Ala Val His Val Asn Gly Pro Arg Arg Asp

245       250       255

Gln Pro Phe Ile Lys Val Asp Cys Ala Ala Leu Pro Ala Thr Leu Ile
         260           265           270

Glu Asn Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Gly Ala Asp
5       275         280         285

His Arg Val Pro Gly Lys Phe Glu Ala Ala Ser Gly Gly Thr Val Phe
         290         295         300

10   Ile Asp Glu Ile Gly Glu Leu Pro Leu Pro Val Gln Gly Lys Leu Leu
       305         310         315         320

Arg Val Ile Gln Asp Arg Glu Phe Glu Arg Val Gly Gly Thr Gln Ala
         325         330         335

15

Val Lys Val Asp Val Arg Ile Val Ala Ala Thr His Arg Asp Leu Ala
         340         345         350

20   Arg Met Val Ala Glu Gly Arg Phe Arg Glu Asp Leu Tyr Tyr Arg Ile
       355         360         365

Lys Val Val Glu Val Val Leu Pro Pro Leu Arg Glu Arg Gly Ala Glu
         370         375         380

25   Asp Ile Glu Arg Leu Ala Arg His Phe Val Ala Ala Val Ala Arg Arg
       385         390         395         400

His Arg Leu Thr Pro Pro Arg Leu Ser Ala Ala Ala Val Glu Arg Leu
         405         410         415

30

Lys Arg Tyr Arg Trp Pro Gly Asn Val Arg Glu Leu Glu Asn Cys Ile
         420         425         430

Glu Ser Ala Val Val Leu Cys Glu Gly Glu Ile Leu Glu Glu His Leu
35       435         440         445

Pro Leu Pro Asp Val Asp Arg Ala Ala Leu Pro Pro Pro Ala Ala Ala

Gln Gly Val Asn Ala Pro Thr Ala Pro Ala Pro Leu Asp Ala Gly Leu

5

Leu Pro Leu Ala Glu Val Glu Arg Arg His Ile Leu Arg Val Leu Asp

Ala Val Lys Gly Asn Arg Thr Ala Ala Ala Arg Val Leu Ala Ile Gly

10

Arg Asn Thr Leu Ala Arg Lys Leu Lys Glu Tyr Gly Leu Gly Asp Glu

15      Pro

*C I*

<210> 5

20      <211> 292

<212> DNA

<213> Myxococcus xanthus

<400> 5

25      Met Arg Ala Ser Gln Ala Glu Ala Pro His Ser Arg Arg Leu Thr Met

Glu Val Arg Phe His Gly Val Arg Gly Ser Ile Ala Val Ser Gly Ser

30

Arg Ile Gly Gly Asn Thr Ala Cys Val Glu Val Thr Ser Gln Gly His

Arg Leu Ile Leu Asp Ala Gly Thr Gly Ile Arg Ala Leu Gly Glu Ile

35

Met Met Arg Glu Gly Ala Pro Gln Glu Ala Thr Leu Phe Phe Ser His

Leu His Trp Asp His Val Gln Gly Phe Pro Phe Phe Thr Pro Ala Trp
85 90 95

5

Leu Pro Thr Ser Glu Leu Thr Leu Tyr Gly Pro Gly Ala Asn Gly Ala
100 105 110

Gln Ala Leu Gln Ser Glu Leu Ala Ala Gln Met Gln Pro Leu His Phe
10 115 120 125

Pro Val Pro Leu Ser Thr Met Arg Ser Arg Met Asp Phe Arg Ser Ala
130 135 140

15 Leu His Ala Arg Pro Val Glu Val Gly Pro Phe Arg Val Thr Pro Ile
145 150 155 160

C 1

Asp Val Pro His Pro Gln Gly Cys Leu Ala Tyr Arg Leu Glu Ala Asp
165 170 175

20

Gly His Ser Phe Val Tyr Ala Thr Asp Val Glu Val Arg Val Gln Glu
180 185 190

Leu Ala Pro Glu Val Gly Arg Leu Phe Glu Gly Ala Asp Val Leu Cys
25 195 200 205

Leu Asp Ala Gln Tyr Thr Pro Asp Glu Tyr Glu Gly Arg Lys Gly Val
210 215 220

30 Ala Lys Lys Gly Trp Gly His Ser Thr Met Met Asp Ala Ala Gly Val
225 230 235 240

Ala Gly Leu Val Gly Ala Arg Arg Leu Cys Leu Phe His His Asp Pro
245 250 255

35

Ala His Gly Asp Asp Met Leu Glu Asp Met Ala Glu Gln Ala Arg Ala
260 265 270

Leu Phe Pro Val Cys Glu Pro Ala Arg Glu Gly Gln Arg Leu Val Leu
                275                 280                 285

5    Gly Arg Ala Ala
          290


     <210> 6
10   <211> 168
     <212> DNA
     <213> Myxococcus xanthus

     <400> 6
15   Met Pro Gly Pro Arg Cys Ala Glu Asn Asp Trp Val Ala Leu Leu Val
          1              5              10             15

     Arg Val Asn His Glu Lys Val Ala Ala Ala Gln Leu Gly Lys His Gly
               20             25             30
20

     Tyr Glu Phe Phe Leu Pro Thr Tyr Thr Pro Pro Lys Ser Ser Gly Val
               35             40             45


     Lys Ala Lys Leu Pro Leu Phe Pro Gly Tyr Leu Phe Cys Arg Tyr Gln
25        50             55             60


     Pro Leu Asn Pro Tyr Arg Ile Val Arg Ala Pro Gly Val Ile Arg Leu
     65             70             75             80


30   Leu Gly Gly Asp Ala Gly Pro Glu Ala Val Pro Ala Gln Glu Leu Glu
               85             90             95


     Ala Ile Arg Arg Val Ala Asp Ser Gly Val Ser Ser Asn Pro Cys Asp
               100            105            110
35

     Tyr Leu Arg Val Gly Gln Arg Val Arg Ile Ile Glu Gly Pro Leu Thr
               115            120            125

Gly Leu Glu Gly Ser Leu Val Thr Ser Lys Ser Gln Leu Arg Phe Ile
      130              135             140

Val Ser Val Gly Leu Leu Gln Arg Ser Val Ser Val Glu Val Ser Ala
    145              150           155            160

Glu Gln Leu Glu Pro Ile Thr Asp
              165

<210> 7
<211> 79
<212> DNA
<213> Myxococcus xanthus

<400> 7
Met Asp Lys Arg Ile Ile Phe Asp Ile Val Thr Ser Ser Val Arg Glu
   1         5          10          15

Val Val Pro Glu Leu Glu Ser His Pro Phe Glu Pro Glu Asp Asp Leu
     20           25          30

Val Gly Leu Gly Ala Asn Ser Leu Asp Arg Ala Glu Ile Val Asn Leu
     35           40          45

Thr Leu Glu Lys Leu Ala Leu Asn Ile Pro Arg Val Glu Leu Ile Asp
    50          55         60

Ala Lys Thr Ile Gly Gly Leu Val Asp Val Leu His Ala Arg Leu
    65          70         75

<210> 8
<211> 420
<212> DNA
<213> Myxococcus xanthus

<400> 8

Met Gly Pro Val Gly Ile Glu Ala Met Asn Ala Tyr Cys Gly Ile Ala
1               5               10              15

Arg Leu Asp Val Leu Gln Leu Ala Thr His Arg Gly Leu Asp Thr Ser
            20              25              30

Arg Phe Ala Asn Leu Leu Met Glu Glu Lys Thr Val Pro Leu Pro Tyr
            35              40              45

Glu Asp Pro Val Thr Tyr Gly Val Asn Ala Ala Arg Pro Ile Leu Asp
        50              55              60

Gln Leu Thr Ala Ala Glu Arg Asp Ser Ile Glu Leu Leu Val Ala Cys
65              70              75              80

Thr Glu Ser Ser Phe Asp Phe Gly Lys Ala Met Ser Thr Tyr Leu His
            85              90              95

Gln His Leu Gly Leu Ser Arg Asn Cys Arg Leu Ile Glu Leu Lys Ser
            100             105             110

Ala Cys Tyr Ser Gly Val Ala Gly Leu Gln Met Ala Val Asn Phe Ile
            115             120             125

Leu Ser Gly Val Ser Pro Gly Ala Lys Ala Leu Val Val Ala Ser Asp
        130             135             140

Leu Ser Arg Phe Ser Ile Ala Glu Gly Gly Asp Ala Ser Thr Glu Asp
145             150             155             160

Trp Ser Phe Ala Glu Pro Ser Ser Gly Ala Gly Ala Val Ala Met Leu
            165             170             175

Val Ser Asp Thr Pro Arg Val Phe Arg Val Asp Val Gly Ala Asn Gly
            180             185             190

Tyr Tyr Gly Tyr Glu Val Met Asp Thr Cys Arg Pro Val Ala Asp Ser
                    195                 200                 205

5       Glu Ala Gly Asp Ala Asp Leu Ser Leu Leu Ser Tyr Leu Asp Cys Cys
                    210                 215                 220

        Glu Asn Ala Phe Arg Glu Tyr Thr Arg Arg Val Pro Ala Ala Asn Tyr .
        225                 230                 235                 240

10

        Ala Glu Ser Phe Gly Tyr Leu Ala Phe His Thr Pro Phe Gly Gly Met
                    245                 250                 255

        Val Lys Gly Ala His Arg Thr Met Met Arg Lys Phe Ser Gly Lys Asn
15                  260                 265                 270

        Arg Gly Asp Ile Glu Ala Asp Phe Gln Arg Arg Val Ala Pro Gly Leu
                    275                 280                 285

20      Thr Tyr Cys Gln Arg Val Gly Asn Ile Met Gly Ala Thr Met Ala Leu
                    290                 295                 300

        Ser Leu Leu Gly Thr Ile Asp His Gly Asp Phe Ala Thr Ala Lys Arg
        305                 310                 315                 320

25

        Ile Gly Cys Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe Phe Ser
                    325                 330                 335

        Gly Val Val Thr Glu Glu Gly Gln Gln Arg Gln Arg Ala Leu Gly Leu
30                  340                 345                 350

        Gly Glu Ala Leu Gly Arg Arg Gln Gln Leu Ser Met Pro Asp Tyr Asp
                    355                 360                 365

35      Ala Leu Leu Lys Gly Asn Gly Leu Val Arg Phe Gly Thr Arg Asn Ala
                    370                 375                 380

Glu Leu Asp Phe Gly Val Val Gly Ser Ile Arg Pro Gly Gly Trp Gly
385                    390                    395                    400

Arg Pro Leu Leu Phe Leu Ser Ala Ile Arg Asp Phe His Arg Asp Tyr
                       405                    410                    415

Gln Trp Ile Ser
          420

<210> 9
<211> 325
<212> DNA
<213> Myxococcus xanthus

<400> 9
Met Ser Ser Val Ala Thr Ala Val Pro Leu Thr Ala Arg Asp Ser Ala
  1              5                    10                    15

Val Ser Arg Arg Leu Arg Ile Thr Pro Ser Met Cys Gly Gln Thr Ser
              20                    25                    30

Leu Phe Ala Gly Gln Ile Gly Asp Trp Ala Trp Asp Thr Val Ser Arg
              35                    40                    45

Leu Cys Gly Thr Asp Val Leu Thr Ala Thr Asn Ala Ser Gly Ala Pro
  50                    55                    60

Thr Tyr Leu Ala Phe Tyr Tyr Phe Arg Ile Arg Gly Thr Pro Ala Leu
  65                    70                    75                    80

His Pro Gly Ala Leu Arg Phe Gly Asp Thr Leu Asp Val Thr Ser Lys
              85                    90                    95

Ala Tyr Asn Phe Gly Ser Glu Ser Val Leu Thr Val His Arg Ile Cys
              100                   105                   110

Lys Thr Ala Glu Gly Gly Ala Pro Glu Ala Asp Ala Phe Gly His Glu
                115                 120               125

Glu Leu Tyr Glu Gln Pro Gln Pro Gly Arg Ile Tyr Ala Glu Thr Phe
                130                 135               140

Asn Arg Trp Ile Thr Arg Ser Asp Gly Lys Ser Asn Glu Ser Leu Ile
145                 150                 155               160

Lys Ser Ser Pro Val Gly Phe Gln Tyr Ala His Leu Pro Leu Leu Pro
                165                 170               175

Asp Glu Tyr Ser Pro Arg Arg Ala Tyr Gly Asp Ala Arg Ala Arg Gly
                180                 185               190

Thr Phe His Asp Val Asp Ser Ala Glu Tyr Arg Leu Thr Val Asp Arg
                195                 200               205

Phe Pro Leu Arg Tyr Ala Val Asp Val Ile Arg Asp Val Asn Gly Val
                210                 215               220

Gly Leu Ile Tyr Phe Ala Ser Tyr Phe Ser Met Val Asp Trp Ala Ile
225                 230                 235               240

Trp Gln Leu Ala Arg His Gln Gly Arg Ser Glu Gln Ala Phe Leu Ser
                245                 250               255

Arg Val Val Leu Asp Gln Gln Leu Cys Phe Leu Gly Asn Ala Ala Leu
                260                 265               270

Asp Thr Thr Phe Asp Ile Asp Val Gln His Trp Glu Arg Val Gly Gly
                275                 280               285

Gly Glu Glu Leu Phe Asn Val Lys Met Arg Glu Gly Ala Gln Gly Arg
                290                 295               300

Asp Ile Ala Val Ala Thr Val Lys Val Arg Phe Asp Ala Ala Ser Glu

Gly Gly Arg Arg Gly

325

5

&lt;210&gt; 10

&lt;211&gt; 83

&lt;212&gt; DNA

10    &lt;213&gt; Myxococcus xanthus

&lt;400&gt; 10

Met Thr Asp Glu Gln Ile Arg Gly Val Val His Gln Ser Ile Val Arg

1                5                10                15

15

Val Leu Pro Arg Val Arg Ser Asn Glu Ile Ala Gly His Leu Asn Leu

20                25                30

Arg Glu Leu Gly Ala Asp Ser Val Asp Arg Val Glu Ile Leu Thr Ser

20            35                40                45

Ile Leu Asp Ser Leu Arg Leu Gln Lys Thr Pro Leu Ala Lys Phe Ala

50                55                60

25    Asp Ile Arg Asn Ile Asp Ala Leu Val Ala Phe Leu Ala Gly Glu Val

65                70                75                80

Ala Gly Gly

30

&lt;210&gt; 11

&lt;211&gt; 374

&lt;212&gt; DNA

35    &lt;213&gt; Myxococcus xanthus

&lt;400&gt; 11

Met Met Gln Glu Arg Gly Val Ala Leu Pro Phe Glu Asp Pro Val Thr
1            5                  10                  15

Asn Ala Val Asn Ala Ala Arg Pro Ile Leu Asp Ala Met Ser Pro Glu
5              20               25              30

Ala Arg Glu Arg Ile Glu Leu Leu Val Thr Ser Ser Glu Ser Gly Val
35              40              45

10     Asp Phe Ser Lys Ser Ile Ser Ser Tyr Ala His Glu His Leu Gly Leu
50              55              60

Ser Arg His Cys Arg Phe Leu Glu Val Lys Gln Ala Cys Tyr Ala Ala
65              70              75              80

15

Thr Gly Ala Leu Gln Leu Ala Leu Gly Tyr Ile Ala Ser Gly Val Ser
85              90              95

Pro Gly Ala Lys Ala Leu Val Ile Ala Thr Asp Val Thr Leu Val Asp
20              100             105             110

Glu Ser Gly Leu Tyr Ser Glu Pro Ala Met Gly Thr Gly Gly Val Ala
115             120             125

25     Val Leu Leu Gly Asp Glu Pro Arg Val Met Lys Met Asp Leu Gly Ala
130             135             140

Phe Gly Asn Tyr Ser Tyr Asp Val Phe Asp Thr Ala Arg Pro Ser Pro
145            150             155             160

30

Glu Ile Asp Ile Gly Asp Val Asp Arg Ser Leu Phe Thr Tyr Leu Asp
165            170             175

Cys Leu Lys His Ser Phe Ala Ala Tyr Gly Arg Arg Val Asp Gly Val
35              180             185             190

Asp Phe Val Ser Thr Phe Asp Tyr Leu Ala Met His Thr Pro Phe Ala

*C1*

Gly Leu Val Lys Ala Gly His Arg Lys Met Met Arg Glu Leu Thr Pro
    210                215                220

5

Cys Asp Val Asp Glu Ile Glu Ala Asp Phe Gly Arg Arg Val Lys Pro
225                230                235                240

Ser Leu Gln Tyr Pro Ser Leu Val Gly Asn Leu Cys Ser Gly Ser Val

10                245                250                255

Tyr Leu Ser Leu Cys Ser Ile Ile Asp Thr Ile Lys Pro Glu Arg Ser
                260                265                270

15    Ala Arg Val Gly Met Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe
                275                280                285

Phe Ser Gly Val Ile Gly Pro Glu Ser Val Ser Ala Leu Ala Gly Leu
    290                295                300

20

Asp Ile Gly Gly His Leu Arg Gly Arg Arg Gln Leu Thr Phe Asp Gln
305                310                315                320

Tyr Val Glu Leu Leu Lys Glu Asn Leu Arg Cys Leu Val Pro Thr Lys

25                325                330                335

Asn Arg Asp Val Asp Val Glu Arg Tyr Leu Pro Leu Val Thr Arg Thr
                340                345                350

30    Ala Ser Arg Pro Arg Met Leu Ala Leu Arg Arg Val Val Asp Tyr His
                355                360                365

Arg Gln Tyr Glu Trp Val
    370

35

&lt;210&gt; 12

<211> 171

<212> DNA

<213> Myxococcus xanthus

<400> 12

Met Asn Thr Pro Ser Leu Thr Asn Trp Pro Ala Arg Leu Gly Tyr Leu
1               5                   10                  15

Leu Ala Val Gly Gly Ala Trp Phe Ala Ala Asp Gln Val Thr Lys Gln
            20                  25                  30

Met Ala Arg Asp Gly Ala Lys Arg Pro Val Ala Val Phe Asp Ser Trp
        35                  40                  45

Trp His Phe His Tyr Val Glu Asn Arg Ala Gly Ala Phe Gly Leu Phe
        50                  55                  60

Ser Ser Phe Gly Glu Glu Trp Arg Met Pro Phe Phe Tyr Val Val Gly
    65                  70                  75                  80

Ala Ile Cys Ile Val Leu Leu Ile Gly Tyr Tyr Phe Tyr Thr Pro Pro
                85                  90                  95

Thr Met Lys Leu Gln Arg Trp Ser Leu Ala Thr Met Ile Gly Gly Ala
                100                 105                 110

Leu Gly Asn Tyr Val Asp Arg Val Arg Leu Arg Tyr Val Val Asp Phe
            115                 120                 125

Val Ser Trp His Val Gly Asp Arg Phe Tyr Trp Pro Ser Phe Asn Ile
        130                 135                 140

Ala Asp Thr Ala Val Val Val Gly Ala Ala Leu Met Ile Leu Glu Ser
    145                 150                 155                 160

Phe Arg Glu Pro Arg Gln Gln Leu Ser Pro Gly
                165                 170

<210> 13

<211> 475

5    <212> DNA

<213> Myxococcus xanthus


<400> 13

Met Gly Thr Ser Glu Pro Val Glu Pro Asp His Ala Leu Ser Lys Pro

10   1               5                   10                  15


Pro Pro Val Ala Pro Val Gly Ala Gln Ala Leu Pro Arg Gly Pro Ala

             20                  25                  30


15   Met Pro Gly Ile Ala Gln Leu Met Met Leu Phe Leu Arg Pro Thr Glu

             35                  40                  45


Phe Leu Asp Arg Cys Ala Ala Arg Tyr Gly Asp Thr Phe Thr Leu Lys

         50                  55                  60

20

Ile Pro Gly Thr Pro Pro Phe Ile Gln Thr Ser Asp Pro Ala Leu Ile

         65                  70                  75                  80


Glu Val Ile Phe Lys Gly Asp Pro Asp Leu Phe Leu Gly Gly Lys Ala

25                   85                  90                  95


Asn Asn Gly Leu Lys Pro Val Val Gly Glu Asn Ser Leu Leu Val Leu

             100                 105                 110


30   Asp Gly Lys Arg His Arg Arg Asp Arg Lys Leu Ile Met Pro Thr Phe

             115                 120                 125


Leu Gly Glu Arg Met His Ala Tyr Gly Ser Val Ile Arg Asp Ile Val

             130                 135                 140

35

Asn Ala Ala Leu Asp Arg Trp Pro Val Gly Lys Pro Phe Ala Val His

145                 150                 155                 160

Glu Glu Thr Gln Gln Ile Met Leu Glu Val Ile Leu Arg Val Ile Phe
165    170    175

5  Gly Leu Glu Asp Ala Arg Thr Ile Ala Gln Phe Arg His His Val His
180    185    190

Gln Val Leu Lys Leu Ala Leu Phe Leu Phe Pro Asn Gly Glu Gly Lys
195    200    205

10

Pro Ala Ala Glu Gly Phe Ala Arg Ala Val Gly Lys Ala Phe Pro Ser
210    215    220

Leu Asp Val Phe Ala Ser Leu Lys Ala Ile Asp Asp Ile Ile Tyr Gln
15  225    230    235    240

Glu Ile Gln Asp Arg Arg Ser Gln Asp Ile Ser Gly Arg Gln Asp Val
245    250    255

20  Leu Ser Leu Met Met Gln Ser His Tyr Asp Asp Gly Ser Val Met Thr
260    265    270

Pro Gln Glu Leu Arg Asp Glu Leu Met Thr Leu Leu Met Ala Gly His
275    280    285

25

Glu Thr Ser Ala Thr Ile Ala Ala Trp Cys Val Tyr His Leu Cys Arg
290    295    300

His Pro Asp Ala Met Gly Lys Leu Arg Glu Glu Ile Ala Ala His Thr
30  305    310    315    320

Val Asp Gly Val Leu Pro Leu Ala Lys Ile Asn Glu Leu Lys Phe Leu
325    330    335

35  Asp Ala Val Val Lys Glu Thr Met Arg Ile Thr Pro Val Phe Ser Leu
340    345    350

Val Ala Arg Val Leu Lys Glu Pro Gln Thr Ile Gly Gly Thr Thr Tyr
      355              360            365

Pro Ala Asn Val Val Leu Ser Pro Asn Ile Tyr Gly Thr His His Arg
      370             375          380

Ala Asp Leu Trp Gly Asp Pro Lys Val Phe Arg Pro Glu Arg Phe Leu
385          390          395          400

Glu Glu Arg Val Asn Pro Phe His Tyr Phe Pro Phe Gly Gly Gly Ile
         405           410          415

Arg Lys Cys Ile Gly Thr Ser Phe Ala Tyr Tyr Glu Met Lys Ile Phe
      420          425          430

Val Ser Glu Thr Val Arg Arg Met Arg Phe Asp Thr Arg Pro Gly Tyr
      435          440          445

His Ala Lys Val Val Arg Arg Ser Asn Thr Leu Ala Pro Ser Gln Gly
      450          455          460

Val Pro Ile Ile Val Glu Ser Arg Leu Pro Ser
465         470           475

<210> 14
<211> 318
<212> DNA
<213> Myxococcus xanthus

<400> 14
Met Val Asp Ser Val Ser Lys Gln Ala Arg Arg Lys Val Phe Leu Phe
1          5          10          15

Ser Gly Gln Gly Thr Gln Ser Tyr Phe Met Ala Lys Glu Leu Phe Asp
      20          25          30

Thr Gln Thr Gly Phe Lys Arg Gln Leu Leu Glu Leu Asp Glu Gln Phe
       35             40             45

Lys Gln Arg Leu Gly His Ser Ile Leu Glu Arg Ile Tyr Asp Ala Arg
5     50           55           60

Ala Ala Arg Leu Asp Pro Leu Asp Asp Val Leu Val Ser Phe Pro Ala
   65          70           75          80

10  Ile Phe Met Ile Glu His Ala Leu Ala Arg Leu Leu Ile Asp Arg Gly
         85          90         95

Ile Gln Pro Asp Ala Val Val Gly Ala Ser Met Gly Glu Val Ala Ala
     100       105      110

15

Ala Ala Ile Ala Gly Ala Ile Ser Val Asp Ala Ala Val Ala Leu Val
    115      120      125

Ala Ala Gln Ala Gln Leu Phe Ala Arg Thr Ala Pro Arg Gly Gly Met
20    130      135      140

Leu Ala Val Leu His Glu Leu Glu Ala Cys Arg Gly Phe Thr Ser Val
145     150      155      160

25  Ala Arg Asp Gly Glu Val Ala Ala Ile Asn Tyr Pro Ser Asn Phe Val
       165      170      175

Leu Ala Ala Asp Glu Ala Gly Leu Gly Arg Ile Gln Gln Glu Leu Ser
    180      185      190

30

Gln Arg Ser Val Ala Phe His Arg Leu Pro Val Arg Tyr Pro Phe His
    195      200      205

Ser Ser His Leu Asp Pro Leu Arg Glu Glu Tyr Arg Ser Arg Val Arg
35    210      215      220

Ala Asp Ser Leu Thr Trp Pro Arg Ile Pro Met Tyr Ser Cys Thr Thr

225   230   235   240

Ala Asn Arg Val His Asp Leu Arg Ser Asp His Phe Trp Asn Val Val
    245   250   255

5

Arg Ala Pro Ile Gln Leu Tyr Asp Thr Val Leu Gln Leu Glu Gly Gln
    260   265   270

Gly Gly Cys Asp Phe Ile Asp Val Gly Pro Ala Ala Ser Phe Ala Thr

10   275   280   285

Ile Ile Lys Arg Ile Leu Ala Arg Asp Ser Thr Ser Arg Leu Phe Pro
   290   295   300

15 Leu Leu Ser Pro Ser Pro Ala Ser Thr Gly Ser Ser Met Gly
   305   310   315

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<210> 15

20 <211> 330

<212> DNA

<213> Myxococcus xanthus

<400> 15

25 Met Thr Glu Ala Pro Ala Pro Arg Ala Pro Ala Gln Val Pro Pro Pro
 1   5   10   15

Pro Ser Ser Pro Trp Ala Leu His Thr Arg Gly Ala Ala Ser Ala Pro
   20   25   30

30

Val Asn Ala Arg Lys Ala Ala Leu Phe Pro Gly Gln Gly Ser Gln Glu
   35   40   45

Arg Gly Met Gly Ala Ala Leu Phe Asp Glu Phe Pro Asp Leu Thr Asp

35 50   55   60

Ile Ala Asp Ala Ile Leu Gly Tyr Ser Ile Lys Arg Leu Cys Leu Glu

65    70    75    80

Asp Pro Gly Lys Glu Leu Ala Gln Thr Gln Phe Thr Gln Pro Ala Leu

    85    90    95

5

Tyr Val Val Asn Ala Leu Ser Tyr Leu Lys Arg Leu Arg Glu Gly Ala

   100    105    110

Glu Gln Pro Ala Phe Val Ala Gly His Ser Leu Gly Glu Tyr Asn Ala

10   115    120    125

Leu Leu Val Ala Gly Ala Phe Asp Phe Glu Thr Gly Leu Arg Leu Val

   130    135    140

15  Lys Arg Arg Gly Glu Leu Met Ser Gly Ala Ser Gly Gly Thr Met Ala

   145    150    155    160

Ala Val Val Gly Cys Asp Ala Val Ala Val Glu Gln Val Leu Arg Asp

    165    170    175

20

Arg Gln Leu Thr Ser Leu Asp Ile Ala Asn Ile Asn Ser Pro Asp Gln

   180    185    190

Ile Val Val Ser Gly Pro Ala Gln Asp Ile Glu Arg Ala Arg Gln Cys

25   195    200    205

Phe Val Asp Arg Gly Ala Arg Tyr Val Pro Leu Asn Val Arg Ala Pro

   210    215    220

30  Phe His Ser Arg Tyr Met Gln Pro Ala Ala Ser Glu Phe Glu Arg Phe

225    230    235    240

Leu Ser Gln Phe Gln Tyr Ala Pro Leu Arg Cys Val Val Ile Ser Asn

    245    250    255

35

Val Thr Gly Arg Pro Tyr Ala His Asp Asn Val Val Gln Gly Leu Ala

   260    265    270

Leu Gln Leu Arg Ser Pro Val Gln Trp Thr Ala Thr Val Arg Tyr Leu
275    280    285

5  Leu Glu Gln Gly Val Glu Asp Phe Glu Glu Leu Gly Pro Gly Arg Val
290    295    300

Leu Thr Arg Leu Ile Thr Ala Asn Lys Arg Gly Ala Pro Ala Pro Ala
305    310    315    320

10

Thr Ala Ala Pro Ala Lys Trp Ala Asn Ala
325    330

15  <210> 16

<211> 417

<212> DNA

<213> Myxococcus xanthus

20  <400> 16

Met Ser Thr Ser Pro Val Gln Glu Leu Val Val Ser Gly Phe Gly Val
1    5    10    15

Thr Ser Ala Ile Gly Gln Gly Ala Ala Ser Phe Thr Ser Ala Leu Leu

25    20    25    30

Glu Gly Ala Ala Arg Phe Arg Val Met Glu Arg Pro Gly Arg Gln His
35    40    45

30  Gln Ala Asn Gly Gln Thr Thr Ala His Leu Gly Ala Glu Ile Ala Ser
50    55    60

Leu Ala Val Pro Glu Gly Val Thr Pro Gln Leu Trp Arg Ser Ala Thr
65    70    75    80

35

Phe Ser Gly Gln Ala Ala Leu Val Thr Val His Glu Ala Trp Asn Ala
85    90    95

Ala Arg Leu Gln Ala Val Pro Gly His Arg Ile Gly Leu Val Val Gly
           100           105           110

5     Gly Thr Asn Val Gln Gln Arg Asp Leu Val Leu Met Gln Asp Ala Tyr
           115           120           125

Arg Glu Arg Val Pro Phe Leu Arg Ala Ala Tyr Gly Ser Thr Phe Met
           130           135           140

10
Asp Thr Asp Leu Val Gly Leu Cys Thr Gln Gln Phe Ala Ile His Gly
     145           150           155           160

Met Ser Phe Thr Val Gly Gly Ala Ser Ala Ser Gly Leu Leu Ala Val
15          165          170          175

Ile Gln Ala Ala Glu Ala Val Leu Ser Arg Lys Val Asp Val Cys Ile
           180           185           190

20    Ala Val Gly Ala Leu Met Asp Val Ser Tyr Trp Glu Cys Gln Gly Leu
           195           200          205

Arg Ala Met Gly Ala Met Gly Thr Asp Arg Phe Ala Arg Glu Pro Glu
           210           215           220

25
Arg Ala Cys Arg Pro Phe Asp Arg Glu Ser Asp Gly Phe Ile Phe Gly
     225           230           235           240

Glu Ala Cys Gly Ala Val Val Val Glu Ser Ala Glu His Ala Arg Arg
30          245          250          255

Arg Gly Val Thr Pro Arg Gly Ile Leu Ser Gly Trp Ala Met Gln Leu
           260           265          270

35    Asp Ala Ser Arg Gly Pro Leu Ser Ser Ile Glu Arg Glu Ser Gln Val
           275           280          285

Ile Gly Ala Ala Leu Arg His Ala Asp Leu Ala Pro Glu Arg Val Asp
290 295 300

Tyr Val Asn Pro His Gly Ser Gly Ser Arg Gln Gly Asp Ala Ile Glu
305 310 315 320

Leu Gly Ala Leu Lys Ala Cys Gly Leu Thr His Ala Arg Val Asn Thr
325 330 335

Thr Lys Ser Ile Thr Gly His Gly Leu Ser Ser Ala Gly Ala Val Gly
340 345 350

Leu Ile Ala Thr Leu Val Gln Leu Glu Gln Gly Arg Leu His Pro Ser
355 360 365

Leu Asn Leu Val Asp Pro Ile Asp Ser Ser Phe Arg Trp Val Gly Ala
370 375 380

Thr Ala Glu Ala Gln Ser Leu Gln Asn Ala Leu Val Leu Ala Tyr Gly
385 390 395 400

Phe Gly Gly Ile Asn Thr Ala Val Ala Val Arg Arg Ser Ala Thr Glu
405 410 415

Ser

<210> 17
<211> 262
<212> DNA
<213> Myxococcus xanthus

<400> 17
Met Gln Ala Ala Ser Pro Pro His Arg Asp Tyr Gln Thr Leu Arg Val
1 5 10 15

Arg Phe Glu Ala Gln Thr Cys Phe Leu Gln Leu His Arg Pro Asp Ala
                20                  25                  30

Asp Asn Thr Ile Ser Arg Thr Leu Ile Asp Glu Cys Gln Gln Val Leu
        35                  40                  45

Thr Leu Cys Glu Glu His Ala Thr Thr Val Val Leu Glu Gly Leu Pro
        50                  55                  60

His Val Phe Cys Met Gly Ala Asp Phe Arg Ala Ile His Asp Arg Val
        65                  70                  75                  80

Asp Asp Gly Arg Arg Glu Gln Gly Asn Ala Glu Gln Leu Tyr Arg Leu
                85                  90                  95

Trp Leu Gln Leu Ala Thr Gly Pro Tyr Val Thr Val Ala His Val Gln
                100                 105                 110

Gly Lys Ala Asn Ala Gly Gly Leu Gly Phe Val Ser Ala Cys Asp Ile
        115                 120                 125

Val Leu Ala Lys Ala Glu Val Gln Phe Ser Leu Ser Glu Leu Leu Phe
        130                 135                 140

Gly Leu Phe Pro Ala Cys Val Met Pro Phe Leu Ala Arg Arg Ile Gly
145                 150                 155                 160

Ile Gln Arg Ala His Tyr Leu Thr Leu Met Thr Arg Pro Ile Asp Ala
                165                 170                 175

Ala Gln Ala Leu Ser Trp Gly Leu Ala Asp Ala Val Asp Ala Asp Ser
                180                 185                 190

Glu Lys Leu Leu Arg Leu His Leu Arg Arg Leu Arg Cys Leu Ser Lys
                195                 200                 205

Pro Ala Val Thr Gln Tyr Lys Lys Tyr Ala Ser Glu Leu Gly Gly Gln

Leu Leu Ala Ala Met Pro Arg Ala Ile Ser Ala Asn Glu Ala Met Phe
225                 230                 235                 240

Ser Asp Arg Ala Thr Leu Glu Ala Ile His Arg Tyr Val Glu Thr Gly
                245                 250                 255

Arg Leu Pro Trp Glu Ser
                260


<210> 18
<211> 256
<212> DNA
<213> Myxococcus xanthus

<400> 18
Met Gly Ile Met Thr Glu Gly Thr Pro Met Ala Pro Val Val Thr Leu
1                 5                 10                 15

His Glu Val Glu Glu Gly Val Ala Gln Ile Thr Leu Val Asp Arg Glu
                20                 25                 30

Asn Lys Asn Met Phe Ser Glu Gln Leu Val Arg Glu Leu Ile Thr Val
                35                 40                 45

Phe Gly Lys Val Asn Gly Asn Glu Arg Tyr Arg Ala Val Val Leu Thr
                50                 55                 60

Gly Tyr Asp Thr Tyr Phe Ala Leu Gly Gly Thr Lys Ala Gly Leu Leu
65                 70                 75                 80

Ser Ile Cys Asp Gly Ile Gly Ser Phe Asn Val Thr Asn Phe Tyr Ser
                85                 90                 95

Leu Ala Leu Glu Cys Asp Ile Pro Val Ile Ser Ala Met Gln Gly His

Gly Val Gly Gly Gly Phe Ala Met Gly Leu Phe Ala Asp Phe Val Val
          115                120                125

Leu Ser Arg Glu Ser Val Tyr Thr Thr Asn Phe Met Arg Tyr Gly Phe
        130                135                140

Thr Pro Gly Met Gly Ala Thr Tyr Ile Val Pro Lys Arg Leu Gly Tyr
    145                150                155                160

Ser Leu Gly His Glu Leu Leu Leu Asn Ala Arg Asn Tyr Arg Gly Ala
            165                170                175

Asp Leu Glu Lys Arg Gly Val Pro Phe Pro Val Leu Pro Arg Lys Glu
            180                185                190

Val Leu Pro His Ala Tyr Glu Ile Ala Arg Asp Leu Ala Ala Lys Pro
        195                200                205

Arg Leu Ser Leu Val Thr Leu Lys Arg His Leu Val Arg Asp Ile Arg
    210                215                220

Arg Glu Leu Pro Asp Val Ile Glu Arg Glu Leu Glu Met His Gly Ile
    225                230                235                240

Thr Phe His His Asp Asp Val Arg Arg Arg Ile Glu Gln Leu Phe Leu
        245                250                255

<210> 19
<211> 424
<212> DNA
<213> Myxococcus xanthus

<400> 19

Met Leu Asn Leu Ile Asn Asn His Ala His Gly Tyr Val Val Thr Pro
1               5                   10                  15

Val Val Leu Ala Cys Asn Asp Ala Gly Leu Phe Glu Leu Leu Arg Gln ,
            20                  25                  30

Gly Pro Lys Asp Phe Asp Arg Leu Ala Glu Ala Leu Arg Ala Asn Arg
            35                  40                  45

Gly His Leu Arg Val Ala Met Arg Met Phe Glu Ser Leu Gly Trp Val
        50                  55                  60

Arg Arg Asp Ala Asp Asp Val Tyr Ala Val Thr Ala Ala Ala Ala Ala
        65                  70                  75                  80

His Arg Ser Phe Pro Arg Glu Ala Gln Ser Leu Phe Ala Leu Pro Met
            85                  90                  95

Asp Arg Tyr Leu Arg Gly Glu Asp Gly Leu Ser Leu Ala Pro Trp Phe
            100                 105                 110

Glu Arg Ser Arg Ala Ser Trp Asp Thr Asp Asp Thr Leu Val Arg Glu
            115                 120                 125

Leu Leu Asp Gly Ala Ile Ile Thr Pro Leu Met Leu Ala Leu Glu Gln
        130                 135                 140

Arg Gly Gly Leu Lys Glu Ala Arg Arg Leu Ser Asp Leu Trp Ser Gly
145                 150                 155                 160

Gly Asp Gly Arg Asp Thr Cys Val Pro Glu Ala Val Gln His Glu Leu
            165                 170                 175

Ala Gly Phe Phe Ser Ala Gln Lys Trp Thr Arg Glu Asp Ala Val Asp
            180                 185                 190

5

10

15

20

25

30

35

Ala Glu Leu Thr Pro Lys Gly Ala Phe Ile Phe Glu Arg Ala Leu Leu
195 200 205

5     Phe Ala Ile Val Gly Ser Tyr Arg Pro Met Leu Ala Ser Met Pro Gln
210 215 220

Leu Leu Phe Gly Asp Cys Asp Gln Val Phe Gly Arg Asp Glu Ala Gly
225 230 235 240

10

His Glu Leu His Leu Asp Arg Thr Leu Asn Val Ile Gly Ser Gly His
245 250 255

Gln His Arg Lys Tyr Phe Ala Glu Leu Glu Lys Leu Ile Ile Thr Val
15     260 265 270

Phe Asp Ala Glu Asn Leu Ser Ala Gln Pro Arg Tyr Ile Ala Asp Met
275 280 285

20     Gly Cys Gly Asp Gly Thr Leu Leu Lys Arg Val Tyr Glu Thr Val Leu
290 295 300

Arg His Thr Arg Arg Gly Arg Ala Leu Asp Arg Phe Pro Leu Thr Leu
305 310 315 320

25

Ile Ala Ala Asp Phe Asn Glu Lys Ala Leu Glu Ala Ala Gly Arg Thr
325 330 335

Leu Ala Gly Leu Glu His Val Ala Leu Arg Ala Asp Val Ala Arg Pro
30     340 345 350

Asp Arg Leu Ile Glu Asp Leu Arg Ala Arg Gly Leu Ala Glu Pro Glu
355 360 365

35     Asn Thr Leu His Ile Arg Ser Phe Leu Asp His Asp Arg Pro Tyr Gln
370 375 380

Pro Pro Ala Asp Arg Ala Gly Leu His Ala Arg Ile Pro Phe Asp Ser
385              390              395              400

Val Phe Val Gly Lys Ala Gly Gln Glu Val Val Pro Ala Glu Val Phe
                 405              410              415

His Ser Leu Val Glu His Leu Glu
                 420

<210> 20
<211> 19053
<212> DNA
<213> Myxococcus xanthus

<400> 20
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